

Solarnet School: "Solar spectropolarimetry: From virtual to real observations"

Adur Pastor Yabar

Leibniz-Institut für Sonnenphysik (KIS)

Spectropolarimetry in the visible/infrared

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This way, one needs to record, at least, the same number of modulated intensities as Stokes parameters desired

Ex. 1: we want Stokes I and V:

We modulate the incoming light so that we measure:

$$\text{a) } I'_1 = I + V$$

$$\text{b) } I'_2 = I - V$$

Ex. 1: we want Stokes I and V:

We modulate the incoming light so that we measure:

$$\text{a) } I'_1 = I + V$$

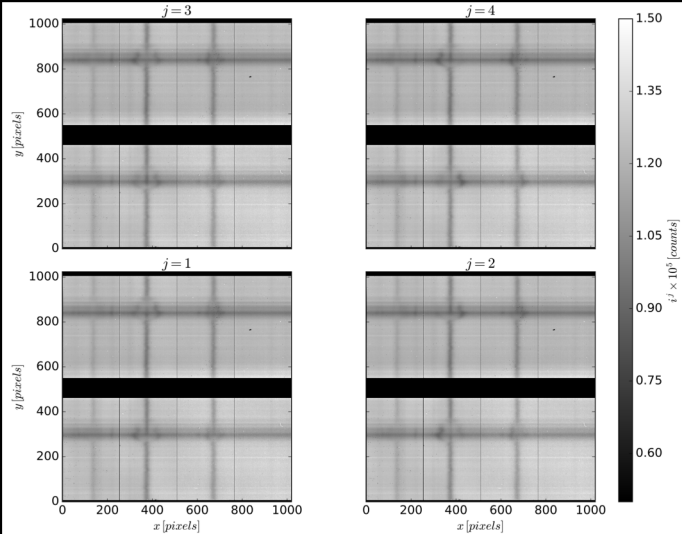
$$\text{b) } I'_2 = I - V$$

This way, in order to recover each Stokes parameters independently:

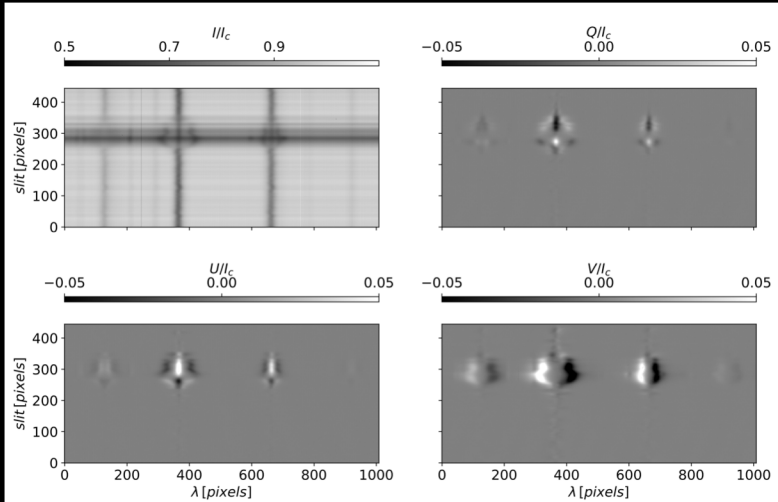
$$I = (I'_1 + I'_2)/2$$

$$V = (I'_1 - I'_2)/2$$

Spectropolarimetry in the visible/infrared



Spectropolarimetry in the visible/infrared



Spectropolarimetry in the visible/infrared

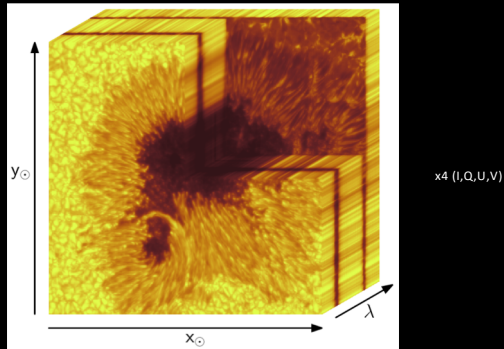
This step requires of additional optics, developing an optimal modulation scheme and the determination of the demodulation matrix, i.e., the inverse of the introduced modulator

Spectropolarimetry in the visible/infrared

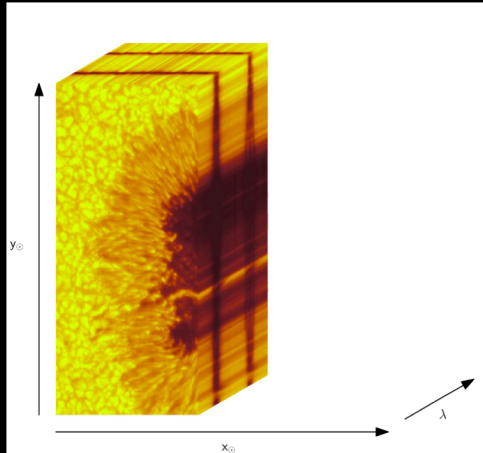
This step requires of additional optics, developing an optimal modulation scheme and the determination of the demodulation matrix, i.e., the inverse of the introduced modulator

Typically, this is supplied in the dedicated software, together with the other reduction steps, by instrument developers.

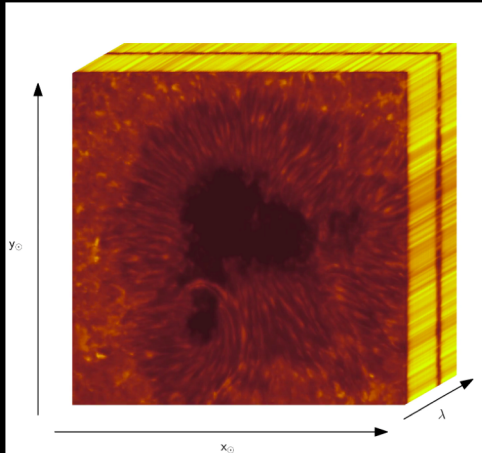
There are different types of instruments that provide spectropolarimetric data and depending on your specific goal, you might be interested in using some of them:



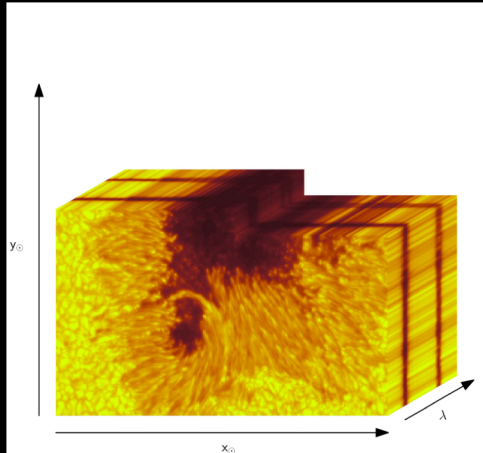
Spectrographs:



Filtergraphs:



Integral field units:



IFU:
Image slicer (Musica)
Fibers
(DL-NIRSP)
Lenslet array
(MIHI)

There are several solar observatories all over the world
but here I focus on those that are offered inside the
Solarnet project:

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Teide observatory (Tenerife):
Gregor: GRIS/Musica

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but here I focus on those that are offered inside the
Solarnet project:

Teide observatory (Tenerife):
Gregor: GRIS/Musica

El Roque de los Muchachos observatory (La Palma):
SST: CRISP

Time access to GRIS@GREGOR:

Solarnet time: half of the applicants must belong to an institute from EU or EU associated.

Spanish time: open for any applicant

German time: With a PI from LIS, MPS or AIP

Time access to CRISP@SST:

Solarnet time: half of the applicants must belong to an institute from EU or EU associated.

Spanish time: With a PI from Spanish institution

Swedish time: With a PI from Swedish institution

Data levels:
Level 0: Raw data

Data levels:

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Level 1: Reduced (demodulated) data: Stokes profiles

Data levels:

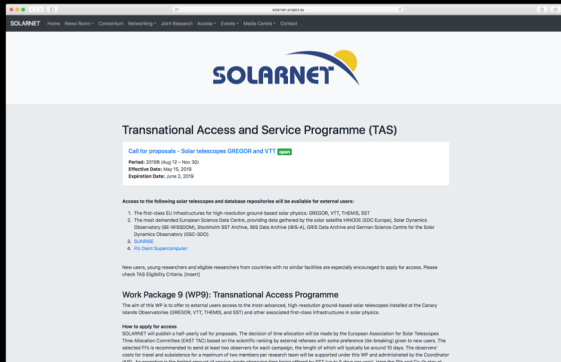
Level 0: Raw data

Level 1: Reduced (demodulated) data: Stokes profiles

Level 2: irrevocable step, Physical parameters

Solarnet data archive:

<http://solarnet-project.eu/Transnational-Access-and-Service-Programme-TAS>



The screenshot shows the Solarnet website with the following content:

SOLARNET Home News Room Conferences Networking Joint Research Access Events Media Centre Contact

SOLARNET

Transnational Access and Service Programme (TAS)

[Call for proposals - Solar telescopes GREGOR and VTT](#) **Open**

Period: 2019 (Aug 12 - Nov 30)
Effective Dates: May 10, 2019
Expiration Date: June 2, 2019

Access to the following solar telescopes and database repositories will be available for external users:

1. The first-class EU infrastructures for high-resolution ground-based solar physics: GREGOR, VTT, THEMIS, SST
2. The most demanded European Science Data Centre, providing data gathered by the solar satellite PROBE (SDC Europe), Solar Dynamics Observatory (SDO), Hinode/SST Archive, SDO Data Archive (SDO-A), GONG Data Archive and German Science Centre for the Solar Dynamics Observatory (GSC-SDO)
3. SURINA
4. Ky Daim Supercomputer

New users, young researchers and eligible researchers from countries with no similar facilities are especially encouraged to apply for access. Please check TAS Eligibility Criteria (new)

Work Package 9 (WP9): Transnational Access Programme

The aim of this WP is to offer to external users access to the most-advanced, high-resolution ground-based solar telescopes installed at the Canary Islands Observatories (GREGOR, VTT, THEMIS, and SST) and other associated first-class infrastructures in solar physics.

How to apply for access

SOLARNET will publish a half-yearly call for proposals. The decision of time allocation will be made by the European Association for Solar Telescopes Trans Allocation Committee (EAST-TAC) based on the scientific ranking by external reviewers with some preference for leading-edge users. The selected PIs is recommended to send at least two observers for each campaign, the length of which will typically be around 10 days. The observers' costs for travel and subsistence for a maximum of two members per research team will be supported under this WP and administered by the Coordinator (EAST). An exceptional amount of travel costs observers from beyond the EEA will be 5,000 euro approx. (see the EAST-PIA-2019-01).

Solarnet data archive: <http://solarnet-project.eu/Transnational-Access-and-Service-Programme-TAS>

The screenshot shows the Solarnet website with the following content:

SOLARNET Home News Room Consortium Networking Joint Research Access Events Media Centre Contact

All proposals should be sent via email to tas@solarnet.eu
Deadline: January 20th, 2016

Travel and Subsistence Grants
Apart from awarding telescope time (following the Announcement of Opportunity, and based on scientific merits and technical feasibility) and access to databases, Travel and Subsistence Grants will be provided to be on-site during the observations.

Telescopes

- [Verycut Travel Telescope \(VTT\)](#)
- [GREGOR](#)
- [Vestibulo-Heliografico para l'Estudo do Magnetismo em duas Instabilidades Solares \(VHEMS\)](#)
- [SunEarth 1-in Solar Telescope \(SET\)](#)

Work Package 10 (WP10): Access to Science Data Centres. Space missions

Observatory (SDO), will be offered as well as ground-based data from GREGOR, BIS, and SET (not previously offered through EC funding). A novelty in this project is the addition of access to numerical simulations, including synthetic observations, to enable close collaboration between observations and theory. This access to data for solar research will appear significantly the success of this Programme for the high-resolution solar physics community.

- [Institute Science Data Centre Europe \(InSDC\)](#)
- [Multi-Instrument Observing for Solar Dynamics Observatory \(SDO\) Mission \(M-WISDOM\)](#)
- [BonnSolar SET Archive](#)
- [BIS Data Archive \(BIS-A\)](#)
- [SDO Data Archive](#)
- [German Science Center for the Solar Dynamics Observatory](#)

Access to the database repositories is freely provided through the Internet connection.

Travel and Subsistence Grants
Observing teams awarded with telescope time under the SOLARNET TAS Programme receive free access to the telescope as well as scientific and technical support to carry out the observations. EC funds are also available to cover travel, accommodation and subsistence costs during the observing run. A maximum of two members from the research team can be supported. We encourage group leaders to involve new users and/or young researchers as beneficiaries for, at least, one of the travels and subsistence grants available. In any case, it is the responsibility of the group leader to decide which member of the team will be supported.

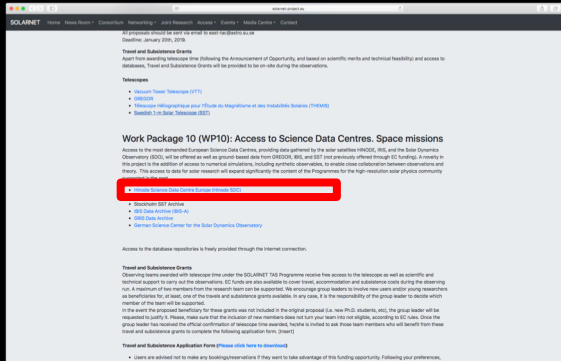
In the event the proposed beneficiary for these grants was not included in the original proposal (i.e. new Ph.D. students, etc), the group leader will be requested to justify it. Please, make sure that the inclusion of new members does not turn your team into not eligible, according to EC rules. Once the group leader has received the official confirmation of telescope time awarded, he/she is invited to ask those team members who will benefit from these travel and subsistence grants to complete the following application form. (Insert)

Travel and Subsistence Application Form ([Please click here to download!](#))

- Users are advised not to make any bookings/reservations if they want to take advantage of this funding opportunity. Following your preferences,

Solarnet data archive:

t-project.eu/Transnational-Access-and-Service-Programme-TAS



SOLARNET Home News Room - Consortium Networking - Joint Research - Access - Events - Media Centre - Contact

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Telescopes

- [Verycuth Telescopes \(VT\)](#)
- [GREGOR](#)
- [Vestibulo-Heliografico para l'Observa do Magalhães em des Instabilidades Solares \(VHMIS\)](#)
- [Svalbard 1-m Solar Telescope \(SST\)](#)

Work Package 10 (WP10): Access to Science Data Centres, Space missions
Access to the most diversified European Science Data Centres, providing data gathered by the solar satellites Hinode, SDO, and the Solar Dynamics Observatory (SDO), will be offered as well as ground-based data from GREGOR, BIL, and SST (not previously offered through EC funding). A novelty in this project is the addition of access to numerical simulations, including synthetic observables, to enable clear collaboration between observations and theory. The access to data for solar research will expand significantly the current of the Programme for the high-resolution solar physics community.

Science Data Centres Europe (SDCE)

- [Donostia SST Archive](#)
- [SDO Data Archive \(SDS-A\)](#)
- [SDO Data Archive](#)
- [German Science Center for the Solar Dynamics Observatory](#)

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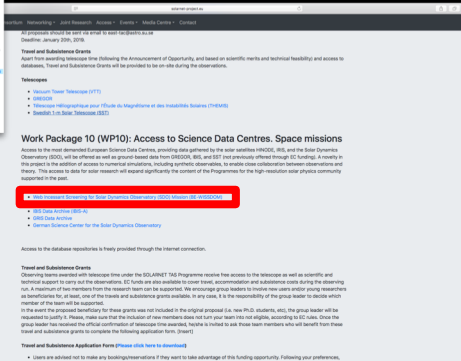
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<http://solarnet-project.eu/Transnational-Access-and-Service-Programme-TAS>



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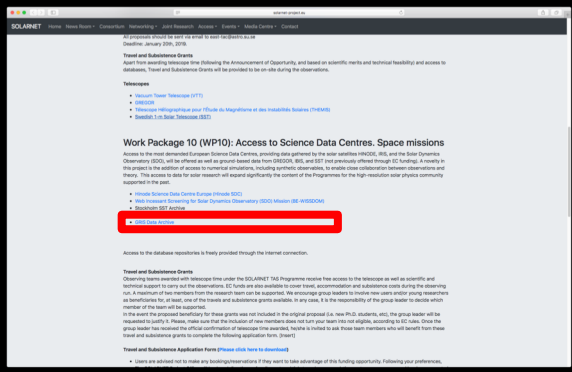
<http://solarnet-project.eu/Transnational-Access-and-Service-Programme-TAS>

The image shows two overlapping browser windows. The background window is the Solarnet website, displaying the 'Transnational Access and Service Programme (TAS)' announcement. It includes a navigation menu, a deadline of January 20th, 2019, and a list of telescopes: Very Large Telescope (VLT), GREGOR, and Solar Orbiter (SOHO). The foreground window shows the 'IBIS-A: The IBIS data Archive' page, which features a solar image and a red box highlighting the 'IBIS data Archive (IBIS-A)' link in the 'Work Package 10 (WP10): Access to Science Data Centres, Space missions' section.

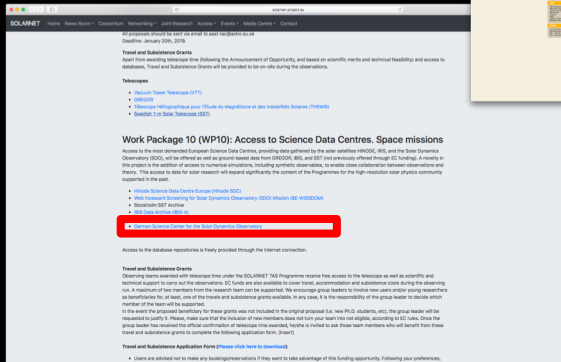


Solarnet data archive:

<http://solarnet-project.eu/Transnational-Access-and-Service-Programme-TAS>



Solarnet data archive: <http://solarnet-project.eu/Transnational-Service-Programme-TAS>



SOLARNET Home News Rooms - Consortium Networking - Joint Research Access - Events - Media Centre - Contact

All proposals should be sent via email to scf@solarnet.eu
Deadline: January 20th, 2016

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- [Institute Science Data Centre Europe \(Institute SDC\)](#)
- [Rixs Inception Observing for Solar Dynamics Observatory \(SDO\) Mission \(RI-WSDDO\)](#)
- [Stockholm SST Archive](#)
- [SDO Data Archive \(SDA\)](#)

- [German Science Center for the Solar Dynamics Observatory](#)

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Travel and Subsistence Application Form [\(Please click here to download\)](#)

- Users are advised not to make any bookings/reservations if they want to take advantage of this funding opportunity. Following your preferences,



GREGOR/GRIS database

GRIS@GREGOR data archive:

<http://sdc.leibniz-kis.de:8080/>

sdsc.leibniz-kis.de

Home

SDC - Solar Data Center

1. Select Desired Instruments:

GRIS @ GREGOR LARS @ VTT

2. General Search Options:

Observation Date [YYYY-MM-DD]:
YYYY-MM-DD < Date > YYYY-MM-DD

Observation Time [HH:MM]:
HH:MM < Time > HH:MM

Position on Solar Disk [θ]:
0 to 90 < Theta [θ] > 0 to 90 Off disc

Position on Solar Disk [μ]:
0 to 1 < Mu [μ] > 0 to 1 Off disc

Reset Search SDC

SDC - Solar Data Center

1. Select Desired Instruments:

GRIS @ GREGOR LARS @ VTT

2. General Search Options:

Observation Date [YYYY-MM-DD]:

YYYY-MM-DD

< Date <

YYYY-MM-DD

Observation Time [HH:MM]:

HH:MM

< Time <

HH:MM

Position on Solar Disk [θ]:

0 to 90

⌵

< Theta [θ] <

0 to 90

⌵

Off disc

Position on Solar Disk [μ]:

0 to 1

⌵

< Mu [μ] <

0 to 1

⌵

Off disc

3. GRIS Search Options:

Observation Wavelength:

1083nm 1565nm Exotic wavelengths

Observation Type:

Single Map Time Sequence

Observation Mode:

Spectroscopic Polarimetric

Reset Search SDC

SDC - Solar Data Center

1. Select Desired Instruments:

GRIS @ GREGOR LARS @ VTT

2. General Search Options:

Observation Date [YYYY-MM-DD]:

YYYY-MM-DD

< Date <

YYYY-MM-DD

Observation Time [HH:MM]:

HH:MM

< Time <

HH:MM

Position on Solar Disk [θ]:

0 to 90

< Theta [θ] <

0 to 90

Off disc

Position on Solar Disk [μ]:

0 to 1

< Mu [μ] <

0 to 1

Off disc

3. GRIS Search Options:

Observation Wavelength:

1083nm 1565nm Exotic wavelengths

Observation Type:

Single Map Time Sequence

Observation Mode:

Spectroscopic Polarimetric

Reset

or

Search SDC

SDC - Solar Data Center

1. Select Desired Instruments:

GRIS @ GREGOR LARS @ VTT

2. General Search Options:

Observation Date [YYYY-MM-DD]:

YYYY-MM-DD

< Date <

YYYY-MM-DD

Observation Time [HH:MM]:

HH:MM

< Time <

HH:MM

Position on Solar Disk [θ]:

0 to 90

< Theta [θ] <

0 to 90

Off disc

Position on Solar Disk [μ]:

0 to 1

< Mu [μ] <

0 to 1

Off disc

3. GRIS Search Options:

Observation Wavelength:

1083nm 1565nm Exotic wavelengths

Observation Type:

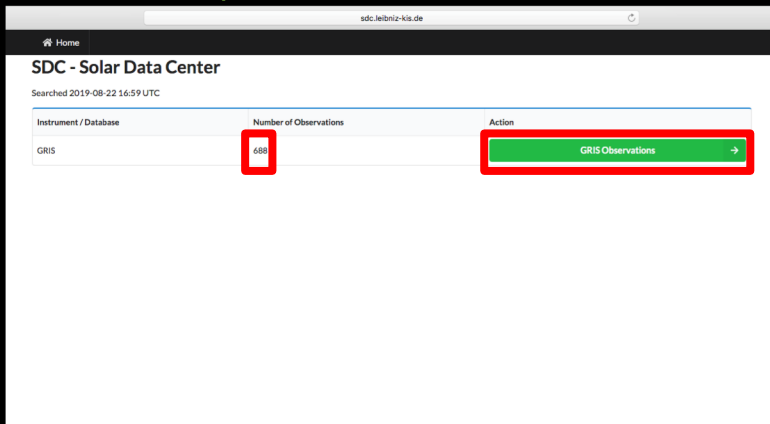
Single Map Time Sequence

Observation Mode:

Spectroscopic Polarimetric

Reset or Search SDC

GRIS@GREGOR data archive:

<http://sdc.leibniz-kis.de:8080/>


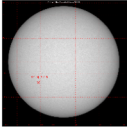
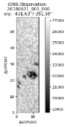



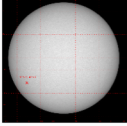
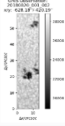



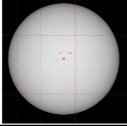
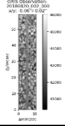


The screenshot shows a web browser window with the URL `sdc.leibniz-kis.de`. The page title is "SDC - Solar Data Center" and it indicates a search performed on 2019-08-22 at 16:59 UTC. Below this is a table with three columns: "Instrument / Database", "Number of Observations", and "Action". A single row is displayed for "GRIS", with the number "488" in the second column and a green button labeled "GRIS Observations" with a right-pointing arrow in the third column. Red boxes highlight the "488" and the "GRIS Observations" button.

Instrument / Database	Number of Observations	Action
GRIS	488	GRIS Observations →

SDC - Solar Data Center

Searched 2019-08-22 16:59 UTC

Help: Click on the table header to sort the corresponding column.

No.	Detail	Date	UT Start	UT End	λ [nm]	Scan Mode	Target	μ	Θ [deg]	Location	Map	Log File	LVL 1	Mark
1		2018-08-21	09:09:50	09:16:06	1565	Single Map specpol.	Pore	0.81	35.9					<input type="checkbox"/>
2		2018-08-20	07:48:46	08:20:36	1565	Sequence specpol.	Pore	0.604	52.8					<input type="checkbox"/>
3		2018-08-20	08:23:53	08:30:57	1565	Single Map specpol.	Quiet Sun	1	0					<input type="checkbox"/>

GRIS@GREGOR data archive:

<http://sdc.leibniz-kis.de:8080/>

Exercise:

Wavelength: 10830Å

Type: time series

Exposure time: 1 sec.

Scan size: 150 steps

Heliocentric angle: [30-60] deg

Date of observation: 2015.06

Hinode/SP database

HINODE/SP database

HINODE/SP data archive:

<http://sdc.uio.no/search/form>

Hinode SDC Europe - Archive Search
33.012 million files, 2006/10/18-2019/08/23, v 2.0

Showing files (0.630% of all files) - 0.42 seconds.

INSTRUMENTS RIS/2 RIS/SP/SC ES ART SOT/1 SOT/1/SHR SOT/1/SHW SOT/1/SP

Quick notes

- Each box like this forms a single criterion
- Blank/unfilled criteria are ignored
- There are **no mandatory criteria**
- It's **perfectly fine** to select millions of files
- Used criteria (i.e. all boxes) are combined with **AND**
- Instrument-specific criteria only rejects among its own files
- Enable tooltips & hover over a keyword/checkbox for more info
- Criterion colour coding after checking/unchecking
- Blank/ignored **Used, ok, Orthogonal, Empty, Refused**
- "Orthogonal" criteria reject all files when combined with all other criteria. "Empty" criteria reject all possible files (separately).
- Examples/recommended searches

SP/SP_Level_1/130_options

Continuous Intensity
Long. Apparent Flux density
Transm. Apparent Flux density
Velocity (km/s)
Stokes I [Lines/cont]

Grouping: Fine
Expand result to include whole group: None
Sort order: DATE_OBS Descending
Lines/page: 10

Find more search criteria: Add new search criteria (+1) allowed

More search criteria: FITS Plan Quality Rise STB STC WXP SOT

Use as Search 1

Search statistics:
*** Max 7 queries.
*** 0 queries used more than 0.1 seconds.
*** Total query time: 0.652 seconds.
*** Total elapsed time: 0.132 seconds.

W3C HTML 4.01 W3C CSS 2.1 W3C XML 1.0 Problems, questions, suggestions and comments to: sdc_sdc@astro.uio.no
This webpage uses cookies to store information about your searches.

Hinode/SP database

Hinode/SP data archive:

<http://sdc.uio.no/search/form>

Hinode SDC Europe - Archive Search
33.012 million files, 2006/10/18-2019/08/23, v 2.0
13473 groups w/169301 matching files (0.51% of all files) - 0.26 seconds.

Quick hints

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- 'Orthogonal' criteria reject all files when combined with all other criteria. 'Empty' criteria reject all possible files (separately).
- Examples/recommended searches

CRITERION	FILE
QuickLink	INSTRUMENT
Level 1	DATE_OBS
Level 2	

SP/SP_Level_1/130_options

Show level 1 reads only

Continuum Intensity
Long. Apparent Flux density
Denser. Apparent Flux density
Velocity (km/s)
Stokes I (lines/cont)

Grouping: Fine
Expand result to include whole group: None
Sort order: DATE_OBS Descending
Lines/base: 10

Find more search criteria: Add new search criteria (*|) allowed

More search criteria: FITS, Flag, Quality, Read, ST0, ST2, STP, SOT

Use as: Search 1

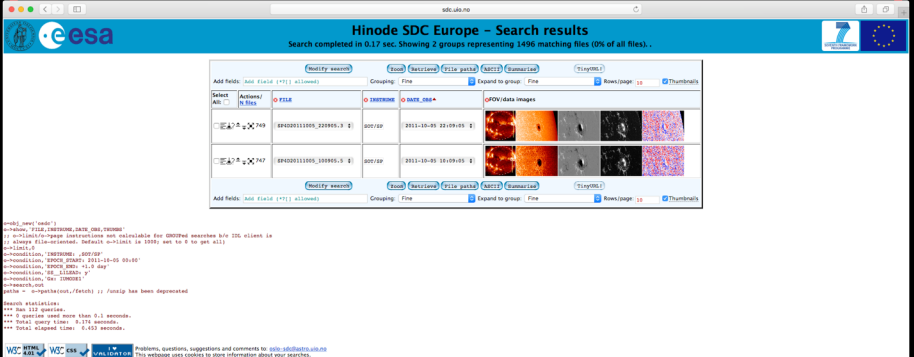
Search statistics:
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*** Total query time: 0.652 seconds.
*** Total elapsed time: 6.132 seconds.

Problems, questions, suggestions and comments to: sdc_sdc@astro.uio.no
This webpage uses cookies to store information about your searches.

Hinode/SP database

Hinode/SP data archive:

<http://sdc.uio.no/search/form>



Hinode SDC Europe - Search results
Search completed in 0.17 sec. Showing 2 groups representing 1496 matching files (0% of all files).

Modify search | Zoom | Retrieve | File path | ASCII | Summary | TidyURL

Add fields: Add field (*) allowed | Grouping: Fine | Expand to group: Fine | Rows/page: 10 | Thumbnails

Select All	Actions/ N files	FILE	SPSR	DATE_OBS	FOV/data images
<input type="checkbox"/>	749	EP402011005_220905_3	007SP	2011-10-05 22:09:05	
<input type="checkbox"/>	747	EP402011005_180905_5	007SP	2011-10-05 18:09:05	

Add fields: Add field (*) allowed | Grouping: Fine | Expand to group: Fine | Rows/page: 10 | Thumbnails

```
##(sh) new| 'sdc'|
##>show, 'FILE,INSTRUME,DATE_OBS,TRUNGS'
##>links/fo-fope constraints not calculable for DR27ed searche b/c SDC client is
##> always file-oriented. Default =>link is 100% set to 0 to get all
##>init.0
##>condition, 'INSTRUME', 'S00/SP'
##>condition, 'EPOCH_START', '2011-10-05 09:00'
##>condition, 'EPOCH_END', '+1.0 day'
##>condition, 'SE_ILRADS', '*'
##>condition, 'on', 'INODES'
##>search_out
path = g-spath(out,Fetch) // /usr/bin has been deprecated

Search statistics:
*** Run 212 queries.
*** 0 queries used more than 0.1 seconds.
*** Total query time: 0.175 seconds.
*** Total elapsed time: 0.653 seconds.
```

W3C HTML 4.01 | W3C CSS | VALIDATOR | Problems, questions, suggestions and comments to sdc_sdc@uio.no
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sot.lmsal.com

SolarSoft

Hinode SOT, Courtesy NAOJ, LMATC, JAXA, NASA, MELCO, and HAO [SOT@LMATC]

Hinode-SOT Spectropolarimeter(SP) Data Product Description and Access

SOT/SP processing level definitions are:

Level 0
reformatted "raw" 4D data (spectral x spatial x 2 CCDSIDES x 4 Stokes parameters), individual FITS files representing one SP integration, grouped hourly

Level 1
calibrated 3D data (spectral x spatial x 4 Stokes parameters) ready for scientific analysis. These data are stored as individual FITS files for each SP integration, grouped into directories for each commanded SP operation, and labeled by the UT start time of that observation (ie 20061110_130011 = yyyyymmdd_hhmmss) outline Level 1 processing skips any files in which substantial telemetry packet loss has occurred. The corresponding .fits files are deleted from the Level 1 data. One may recover some data by running `sp_prep` manually with the `/ryhander` keyword

Level 1D
quick analysis of the Level1 SP data to produce images of measures of the longitudinal and transverse field, Doppler velocity, continuum intensity, solar coordinates, and many other parameters describing the data and the reduction process

Level 2
results of full Milne-Eddington inversion of the Level1 data, available as both FITS images of the inversion parameters and ancillary quantities, and NetCDF files. [Ref. more detailed description of SOT/SP/Level2 process](#)

Icons on *this* page represent only one sample of Level1 & Level1D data available for the corresponding month - subsequent monthly indices (e.g. via YYYY/MM & icon links below) include summaries of All currently available L1/L1D data, including complete thumbnail galleries for the month. The monthly indices also include links to previous and subsequent month indices as well as verbatim `showall` commands; those commands may be cut&paste directly into an SSW client session to transfer the corresponding Level1 and Level1D science data, either as local files or directly into an `swidl` memory object for immediate analysis. No local data or catalogs are required, but in order to use these commands, an `swidl` session with an up-to-date Hinode-SOT branch and decent internet connection is required.

The SOT-SP calibration software is largely the work of [Bruce Lites](#), [HAO](#) with major contributions from the instrument team, including Ichimoto san et al.

All Level0->Level1->Level1D software is distributed within the SOT branch of SolarSoft, including the [sp_prep](#) suite used to generate the Level1 data summarized on these pages.

Please direct SOT-SP calibration questions and comments to [Bruce Lites](#). Issues or suggestions regarding the SOT-SP WWW and/or `swidl` interface and access routines should be addressed to [Sam Freeland](#)

Information regarding Hinode SOT (FG & SP) instrument and analysis software is available in [SOT Data Analysis Guide](#)

2006/11	
2006/12	
2007/01	
2007/02	
2007/03	
2007/04	
2007/05	



Summary of SOT-SP observations for the month. Thumbnails summaries for each commanded SP observation are provided, including continuum, longitudinal, transverse, and doppler velocity; these link to the corresponding full resolution graphical summaries

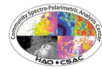
SSW clients which do not have access to data locally may incorporate the desired SP science data summarized on this page into your current *sswidl* session via *verbitum* and *spdata* of any of the corresponding *orange sswidl* commands. The commands will transfer the corresponding Level 1 and Level1D data, either as local files or directly into an *sswidl* memory object for immediate analysis. No local data or catalogs are required, but in order to use these commands, an *sswidl* session with an up to date Hinode-SOT branch and decent internet connection is required.

The top verbitum command (e.g. `stks=stotsp_stks2trsect(20061110_130011)`) returns a structure (*stks*) containing all of the Level1D parameters; structure tags correspond 1:1 to the output parameters described in [stksimages_sbsp.pro](#).

The middle command (e.g. `stotsp_stks2index,20061110_130011_index,data`) will return SSW compliant *index,data* for direct input -> `index2mat.pro` -> `SSW_mapping_suite` by Zarro et al.

The bottom command (e.g. `stotsp_gendata,20071219_122003 /level`) will transfer all Level1 FITS files associated with this map to a locally generated directory. This suite is included so that solarsoft users who do not have direct access to the Hinode data servers will be able to download the calibrated Stokes IQUV spectra themselves. Beware that these datasets can be large, often exceeding 1 Gbyte.

SP Level ID	Verbitum SSWIDL command	Continuum/Longitudinal/Transverse/Velocity (Thumbnails -> Details)
20100202_145906	<code>stks=stotsp_stks2trsect(20100202_145906)</code> <code>stotsp_stks2index,20100202_145906_index,data</code> <code>stotsp_gendata,20100202_145906 /level</code>	
20100202_164436	<code>stks=stotsp_stks2trsect(20100202_164436)</code> <code>stotsp_stks2index,20100202_164436_index,data</code> <code>stotsp_gendata,20100202_164436 /level</code>	
20100202_183707	<code>stks=stotsp_stks2trsect(20100202_183707)</code> <code>stotsp_stks2index,20100202_183707_index,data</code> <code>stotsp_gendata,20100202_183707 /level</code>	
20100203_154814	<code>stks=stotsp_stks2trsect(20100203_154814)</code> <code>stotsp_stks2index,20100203_154814_index,data</code> <code>stotsp_gendata,20100203_154814 /level</code>	
20100203_172235	<code>stks=stotsp_stks2trsect(20100203_172235)</code> <code>stotsp_stks2index,20100203_172235_index,data</code> <code>stotsp_gendata,20100203_172235 /level</code>	
20100203_234353	<code>stks=stotsp_stks2trsect(20100203_234353)</code> <code>stotsp_stks2index,20100203_234353_index,data</code> <code>stotsp_gendata,20100203_234353 /level</code>	
20100204_150645	<code>stks=stotsp_stks2trsect(20100204_150645)</code> <code>stotsp_stks2index,20100204_150645_index,data</code> <code>stotsp_gendata,20100204_150645 /level</code>	
20100204_162106	<code>stks=stotsp_stks2trsect(20100204_162106)</code> <code>stotsp_stks2index,20100204_162106_index,data</code> <code>stotsp_gendata,20100204_162106 /level</code>	
20100204_181506	<code>stks=stotsp_stks2trsect(20100204_181506)</code> <code>stotsp_stks2index,20100204_181506_index,data</code> <code>stotsp_gendata,20100204_181506 /level</code>	
20100205_151408	<code>stks=stotsp_stks2trsect(20100205_151408)</code> <code>stotsp_stks2index,20100205_151408_index,data</code> <code>stotsp_gendata,20100205_151408 /level</code>	
20100205_165905	<code>stks=stotsp_stks2trsect(20100205_165905)</code> <code>stotsp_stks2index,20100205_165905_index,data</code> <code>stotsp_gendata,20100205_165905 /level</code>	
20100205_180400	<code>stks=stotsp_stks2trsect(20100205_180400)</code> <code>stotsp_stks2index,20100205_180400_index,data</code> <code>stotsp_gendata,20100205_180400 /level</code>	
20100207_182635	<code>stks=stotsp_stks2trsect(20100207_182635)</code> <code>stotsp_stks2index,20100207_182635_index,data</code> <code>stotsp_gendata,20100207_182635 /level</code>	
20100207_231005	<code>stks=stotsp_stks2trsect(20100207_231005)</code> <code>stotsp_stks2index,20100207_231005_index,data</code> <code>stotsp_gendata,20100207_231005 /level</code>	
20100208_100405	<code>stks=stotsp_stks2trsect(20100208_100405)</code> <code>stotsp_stks2index,20100208_100405_index,data</code> <code>stotsp_gendata,20100208_100405 /level</code>	



Community Spectro-polarimetric Analysis Center

CSAC HINODE/SP DATA

This page serves Level 1 and Level 2 data for the Spectro-Polarimeter on board Hinode. A detailed description of the Hinode/SP data products can be found here. Please use the appropriate DOIs to reference any data products that are used in a public context:

- Level 1 Hinode/SP data: 10.5065/D6T151QF.
- Level 1.5 Hinode/SP data: 10.5065/D6P84BZ6.
- Level 2 Hinode/SP data: 10.5065/D6JH3J8D.

Enter a date range
(format: YYYY-MM-DD)

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 - [Disambiguation Codes](#)
 - [Instruments](#)
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 - [Stokes Forward Modeling](#)
 - [The Team](#)
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
- #### SPECIAL HOP
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- Level 1 Hinode/SP data: 10.5065/D6T151QF.
- Level 1.5 Hinode/SP data: 10.5065/D6PB48Z6.
- Level 2 Hinode/SP data: 10.5065/D6JH3J8D.

Enter a date range
(format: YYYY-MM-DD)




2019-07-01 2019-07-21

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Data-sets corresponding to the given date range:




1. 2019-07-02 00:36 [Level 1 FITS files](#) [Level 2 FITS file](#)

[Level 1.5 \(QuickLook\)](#) [Thermal Drift](#) [Line Center](#)

2. 2019-07-02 03:53 [Level 1 FITS files](#) [Level 2 FITS file](#)

[Level 1.5 \(QuickLook\)](#) [Thermal Drift](#) [Line Center](#)

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Hinode/SP data archive:

<http://sdc.uio.no/search/form>

(<http://sot.lmsal.com/data/sot/level1d/>)

(https://csac.hao.ucar.edu/sp_data.php)

Exercise:

Obs. date: 2007.05.17

n slits: 750

pointing: ~491,53